

Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Andrew True

GENERAL INFORMATION:

Name:	Air Products and Chemicals, Inc.
Address:	412 North Main Street Calvert City, KY 42029
Date application received:	1/09/2008
SIC Code/SIC description:	2869, Industrial Organic Chemicals
Source ID:	21-157-00009
Source A.I. #:	2915
Activity ID:	APE20080001
Permit:	V-07-009 R1

APPLICATION TYPE/PERMIT ACTIVITY:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input checked="" type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
<input checked="" type="checkbox"/> Administrative	<input checked="" type="checkbox"/> Title V
<input type="checkbox"/> Minor	<input type="checkbox"/> Synthetic minor
<input type="checkbox"/> Significant	<input checked="" type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input checked="" type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input checked="" type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☒ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)*	Potential (tpy)
PM/PM ₁₀	17.33	34.04
SO ₂	5.63	3.14
NO _x	167.39	360.36
CO	90.86	327.06
VOC	188.21	1116.43
Single HAPs > 10 tpy		
Vinyl Acetate Monomer	33.51	33.95
Hydrochloric Acid	2.77	15.70
Methanol	22.44	24.42
Source wide HAPs	63.92	84.83

* Actual emissions taken from the “2006 Emission Inventory Survey” (TEMPO).

SOURCE DESCRIPTION:

Air Products and Chemicals, Inc. (Air Products), Calvert City, is a chemical manufacturing plant. The source is a major source, as defined by 401 KAR 52:020 Title V Permits, for the potential emissions of over 100 tons per year of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC), the potential of a single hazardous air pollutant (HAP) greater than 10 tons per year, and the potential combined HAP emissions greater than 25 tons per year.

The source is also a major source, as defined by 401 KAR 51:017 Prevention of Significant Deterioration of Air Quality (PSD), for potential emissions of over 100 tons per year of NO_x, CO, and VOC.

For the purpose of Title V permitting, this facility is split into the following areas:

1. Acetylenics (Specialty Additives) Production Unit
2. Plant Utilities
3. Cogeneration Plant

ADMINISTRATIVE PERMIT AMENDMENT V-07-009 R1:

Air Products and Chemicals (APCI) decided to sell its polymer operations at the Calvert City facility to Wacker Chemie AG (Wacker). An application for the modification of the APCI Title V Permit (V-07-009) was received by the Division for Air Quality (Division) on January 9, 2008. Wacker submitted a permit application to the Division for the transfer of the APCI polymers related emission points to their existing TV Permit (V-06-001). This application was received by the Division on December 17, 2007. APCI will retain ownership of the North and South VCM Thermal Oxidizers (B-27 and B-39) and will continue to be regulated under 40 CFR Part 61 Subpart F (National Emission Standards for Hazardous Air Pollutants- Vinyl Chloride).

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Below is a list of units being transferred as a result of the agreement between Air Products and Chemicals (APCI) and Wacker Chemie AG (Wacker).

Emission Units Owned by Air Products Transferred to Wacker

Title V ID	Equipment ID	Description
A-54	FB-1510	Vinyl Acetate Monomer Day Tank
A-54-1	FB-1511	Vinyl Acetate Monomer Day Tank
A-80	FB-1515	Vinyl Acetate Monomer Storage Tank
B-13	FB-1516	Vinyl Acetate Monomer Storage Tank
A-94	BA-7501	Ethylene Unloading Flare
50 B-94	DC-7202 FA-7203	AF #1 Reactor / Stripper
A-93	FA-7106	AF #1 R1 Post Add Tank
A-93	FA-7110	AF #1 Functional Monomer Tank
A-93	FA-7111A	AF #1 Redox 1A Tank
A-93	FA-7111B	AF #1 Redox 1B Tank
A-93	FA-7112	AF #1 Redox #2 Tank
A-93	FA-7166	AF #1 Treat Tank
A-99	FA-7109	AF #1 Premix Tank
B-44	FA-7141 (to be replaced with FA-7168)	AF#1 Monomer Delay Tank
51 B-94	DC-7203 DC-7206	AF #2 Reactor / Stripper
A-93	FA-7118	AF #2 Functional Monomer Tank
A-93	FA-7119A	AF #2 Redox 1A Tank
A-93	FA-7119B	AF #2 Redox 1B Tank
A-93	FA-7120	AF #2 Redox 2 Tank
A-93	FA-7121	AF #2 Treat Tank
A-93	FA-7167	AF #2 R1 Post Add Tank
B-01	FA-7117	AF #2 Premix Tank

Title V ID	Equipment ID	Description
B-45	FA-7142 (to be replaced with FA-7169)	AF#2 Monomer Delay Tank
52	DC-7204 FA-7208 FA-7209	AF #3 Reactor / Stripper AF #3 Dirty Water Tank
C-35	FA-7124	AF #3 Monomer Tank
C-35	FA-7125	AF #3 Functional Monomer Tank
C-35	FA-7126A	AF #3 Redox 1A Tank
C-35	FA-7126B	AF #3 Redox 1B Tank
C-35	FA-7146	AF #3 Redox 2 Tank
C-35	FA-7147	AF #3 Stripper Post Add Tank
C-35	FA-7156	AF #3 Redox 2 Tank
C-35	FA-7157	AF #3 Stripper Redox Tank
B-02	FA-7132	AF #3 Premix Tank
B-94	BA-7502	Airflex #4 Flare
B-94	DC-7401 FA-7402	Airflex #4 Reactor / Stripper
C-03	FA-7114	AF #4 Post Add Tank
C-03	FA-7403	AF #4 Premix Tank
C-03	FA-7406A	AF #4 Redox 1A Tank
C-03	FA-7406B	AF #4 Redox 1B Tank
C-03	FA-7407	AF #4 Redox 2 Tank
C-03	FA-7412	AF #4 R1 Post Add Tank
C-03	FA-7733	AF #4 Condensate Hold Tank
C-41	FA-8503	AF #5 Premix Tank
C-41	FA-8505	AF #5 Functional Monomer Tank
C-41	FA-8506A	AF #5 Redox 1A Tank
C-41	FA-8506B	AF #5 Redox 1B Tank
C-41	FA-8507	AF #5 Redox 2 Tank

Title V ID	Equipment ID	Description
C-41	FA-8512	AF #5 Treat Tank
C-41	FA-8514	AF #5 Post Add Treat Tank
C-43	DC-8501 FA-8502	Airflex #5 Reactor / Stripper
48	DC-7201	Atmospheric Reactor
A-93	FA-7103	ATM Redox 2 Tank
A-93	FA-7105	ATM Post Add Treat Tank
A-93	FA-7108	ATM Redox 1A Tank
A-96	FA-7102	ATM Premix Tank
A-97	FA-7101	ATM Monomer Tank
A-98	FA-7201	ATM Blender
B-03	FA-7133	ATM Functional Monomer Tank
53	FB-7002	Caustic-Methanol Chemical Clean Tank
53	FB-7003	Caustic-Methanol Chemical Clean Tank
C-50	FB-7043	Fresh Chem Clean Tank
Insignificant	FA-7114, 7115, 7153	AF#1 / #2 Shared In-Process Defoamer Tanks (insignificant activity)
Insignificant	FA-7159 – 7161	AF#3 In-Process Defoamer Tanks (insignificant activity)
Insignificant	FA-7420 - 7423	AF#4 / #5 Shared In-Process Defoamer Tanks (insignificant activity)
Insignificant	FA-7411	In-Process Defoamer feed Tank (insignificant activity)
99	FB-7504	DMF Storage Tank (insignificant activity)
A-84	FB-7503	Out of service tank (insignificant activity)
A-87	FB-7560	Aqua Ammonia Tank (insignificant activity)
A-87, B-93	FB-7558, 7559, & 7561	Surfactant Tanks (insignificant activity)
A-87, C-15	FB-7570	Surfactant Tank (insignificant activity)
A-87, C-15	FB-7573	Surfactant Tank (insignificant activity)
A-87, C-15	FB-7578	Surfactant Tank (insignificant activity)
A-89	FB-7601 - 7606	Emulsion Storage Tanks (insignificant activity)

Title V ID	Equipment ID	Description
A-89	FB-7607	Aerosol A-102 Tank (insignificant activity)
A-89	FB-7608	Rhodapon LX-28/AEP Tank (insignificant activity)
A-89	FB-7609	Surfactant Tank (insignificant activity)
A-89	FB-7610	Surfactant Tank (insignificant activity)
A-90	FB-7610A - 7618	Emulsion Storage Tanks (insignificant activity)
A-91, A-92	FB-7619 - 7627	Emulsion Storage Tanks (insignificant activity)
B-35	FA-7215 - 7216	Emulsion Storage Tanks (insignificant activity)
B-36	FB-7628 - 7634	Emulsion Storage Tanks (insignificant activity)
B-40	FB-7635	Emulsion Storage Tank (insignificant activity)
B-41	FB-7636	Emulsion Storage Tank (insignificant activity)
B-42	FB-7637	Emulsion Storage Tank (insignificant activity)
B-43	FB-7638	Emulsion Storage Tank (insignificant activity)
B-46	FB-7502	NMA / MAMD Storage Tank (insignificant activity)
B-47	FB-7501	Acrylamide Storage Tank (insignificant activity)
B-48	FB-7508	TBHP Storage Tank (insignificant activity)
B-93	FB-7551 - 7554	Surfactant Tanks (insignificant activity)
B-93	FB-7556	Surfactant Tank (insignificant activity)
C-02	FB-7639 - 7644	Emulsion Storage Tanks (insignificant activity)
C-04	FB-7441	Emulsions Wastewater Tank (insignificant activity)
C-06	FB-7645 - 7647	Emulsion Storage Tanks (insignificant activity)
C-27	FB-7648 - 7650	Emulsion Storage Tanks (insignificant activity)
C-42	FB-7651 - 7653	Emulsion Storage Tanks (insignificant activity)
Insignificant	FB-7509	MAMD / NMA Storage Tank (insignificant activity)
Insignificant	FA-7009	Sulfuric Acid Tank (insignificant activity)
Insignificant	HA-7432	Hydrogen Peroxide Tank (insignificant activity)
F-04	FUG-EMUL	Emulsions Fugitive Emissions (VAM and Ethylene - includes former EP A-11)

Title V ID	Equipment ID	Description
M-07	EF-0301 Cell 1 EF-0302 Cell 2 EF-0303 Cell 3	#2 & #4 Cooling Towers

EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

In order to preclude applicability of 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality (PSD) for VOC, the source had elected to accept group emission limits in previous permits. These limits are reflected in Section D of the permit.

OPERATIONAL FLEXIBILITY:

None